

Spent Nuclear Fuel (SNF) Stabilization and Disposition Storage Operations (HQ-0012X); and SNF Stabilization and Disposition (RL-0012)

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Suspended racks underwater in the K East Basin



Rack removal in K East Basin

Overview

This section addresses work in Project Baseline Summary (PBS) HQ-0012X, *Spent Nuclear Fuel Stabilization and Disposition Storage Operations*; and RL-0012, *Spent Nuclear Fuel Stabilization and Disposition*.

NOTE: Unless otherwise noted, all information contained herein is as of the end of August 2005.

Notable Accomplishments

SNF Stabilization and Disposition (PBS RL-0012)

Sludge Retrieval and Treatment: Eighty-three percent (35m³ of 42m³) containerization was reached in K East Basin. Sixty-Three percent of container lids (4,790 of 7,636 lids) have been removed from K West Basin. The final large diameter container (LDC) of North Loadout Pit (NLOP) sludge was shipped to T Plant for treatment (4m³ of sludge). Sludge Treatment completed the Mobile Solidification System (MOSS) 90 percent design review. The hose-in-hose transfer lines between K East and K West have been installed.

Decontamination and Demolition (D&D): D&D initiated dewatering of the K West discharge chute in preparation for grouting and sealing the construction joint.

Issues

Sludge Treatment: A preliminary accident analysis indicates high unmitigated consequences which will require controls/containment cost to increase over current estimates. Impacts to sludge transfer, K West sludge consolidation, and K East demolition have resulted from the K East delays, as reported in the milestone summary for this report. Completion of TPA M-34-33B, *"Complete K East Sludge Containerization,"* due March 1, 2005, is projected for March 2006.

100K Area: The current 100K Area seismic analysis has come into question (similar to the Waste Tank Project) which could require modifications to the Cold Vacuum Drying Facility prior to treatment equipment installation. Defense Nuclear Facilities Safety Board (DNFSB) milestone 2001-1-CN-120E, *"Complete K East Sludge to K West Containers"* (due July 31, 2005 – missed), and Tri-Party Agreement (TPA) milestone M-34-34, *"Complete Removal of K East Sludge"* (due January 31, 2006), are projected to complete in April 2006, and are dependent upon completion of K East Containerization activities.

2005/2006 Budget/Funding: K Basins Closure (KBC) is re-estimating the life-cycle completion cost and schedule for both the sludge disposition, and decontamination and demolition of the K Basins. Preliminary estimates of funding requirements for FY 2006 show significant growth in the 2012 funding control point, requiring close coordination of priorities to maintain sufficient progress on TPA and DNFSB milestones. Fluor Hanford (FH) will complete the life-cycle estimate for delivery to RL on September 30, 2005.

FY 2005 Funds vs. Spend Forecast (\$M)

		Projected FY 2005 Funding	FY 2005 Fiscal Year Spend Forecast	Variance
HQ-0012X	SNF Stabilization and Disposition Storage Ops	\$ 0.9	\$ 0.9	\$ 0.0
RL-0012	SNF Stabilization & Disposition	\$ 151.8	\$ 144.2	\$ 7.6
Total		\$ 152.7	\$ 145.0	\$ 7.6

FY 2005 Schedule/Cost Performance (\$M)

		Budgeted Cost of Work Scheduled	Budgeted Cost of Work Performed	Actual Cost of Work Performed	Schedule Variance \$	Schedule Variance %	Cost Variance \$	Cost Variance %	Budget At Completion
HQ-0012X	SNF Stabilization and	\$0.9	\$0.9	\$0.8	\$0.0	0.0%	\$0.1	9.9%	\$0.9
RL-0012	SNF Stabilization & Disposition	\$95.1	\$90.9	\$129.2	-\$4.2	-4.4%	-\$38.3	-42.1%	\$106.2
Total		\$95.9	\$91.8	\$130.0	-\$4.2	-4.5%	-\$38.2	-41.6%	\$107.0

Numbers are rounded to the nearest \$0.1M and include the closure services allocation.

Schedule Performance (-\$4.2M/-4.5 %): The variance is due to:

- North Loadout Pit sludge collection and treatment (-\$0.2M).
- Delays in K East Basin sludge containerization (-\$0.5M).
- Delays in K East to K West Transfer System and Fuel Retrieval (BNGA) (-\$5.1M).
- Delayed hydrolasing, K West Discharge Chute, K East Grout and Dewater and K East Superstructure (-\$4.6M).

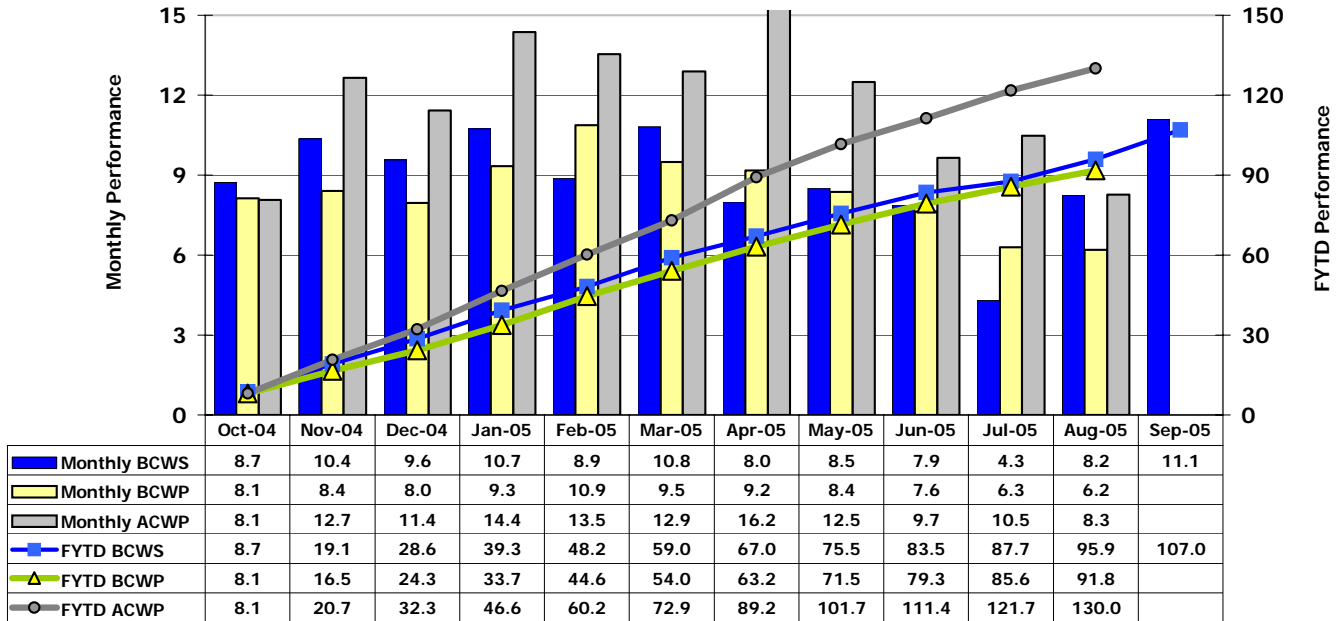
The unfavorable schedule variance is partially offset by a favorable schedule variance for completing MCO movement activities that were budgeted to be completed in FY 2004 (+\$1.7M), completing sludge FY 2004 carryover activities (+\$3.1M), MCO welding ahead of schedule (+\$0.2M), and Sludge Treatment acceleration from FY 2006 (+\$1.2M).

Cost Performance (-\$38.2M/-41.6%): The variance is due to:

- Overruns developed in completion of fuel movement (-\$1.5M).
- Unplanned Ion Exchange Module procurement required due to water clarity issues requiring increased replacement frequency (-\$0.6M).
- Labor/material overruns in Safe and Compliant activities due to underestimated requirements and the delay in ramp-down from fuel removal activities (-\$3.4M).
- Increased cost in Sludge Retrieval activities (K East Containerization, Sludge Transfer System, K West Retrieval, etc.) due to slower progress resulting in higher labor costs for the work being completed. Procurement of additional materials such as cameras, tools, and filters to resolve water visibility problems (-\$35.2M), and D&D labor rates and technical requirements (-\$3.4M).
- Offset by efficiencies at the Canister Storage Building (CSB) (+\$1.4M) and Closure Services (+\$0.3M), under runs in NLOP due to savings by moving treatment from 325 Building to T-Plant (+\$3.9M), and sludge treatment staffing level lower than plan (+\$0.3M).

FY 2005 Schedule/Cost Performance, continued

Performance Analysis
FYTD and Monthly (\$M)



Milestone Achievement

Number	Milestone Title	Type (TPA/PI/ DNFSB)	Due Date	Actual Date	Forecast Date	Status / Comments
M-034-18B (S00-00-902) (S10-05-012)	Complete removal of all K Basin SNF	TPA/DNFSB/ PI	07/31/04	10/15/04		Complete
DNFSB 2001-1 (S10-05-012)	Remove SNF from K Basins	DNFSB	07/31/04	10/12/04		Complete
RL-12-1.aa (S10-99-960)	Complete SNF Removal from K West	PI	08/31/04	10/15/04		Complete
RL12-1.cd (S10-99-977)	Initiate Full Scale K East Water Removal	PI	09/30/04	09/19/04		Complete
M-034-33A (S10-05-009)	Initiate Sludge Containerization	TPA	10/31/04	10/31/04		Complete
DNFSB 121 (S10-05-013)	Select Sludge Treatment Method	DNFSB	11/30/04	11/15/04		Complete
RL-12-1.c (S10-99-966)	Complete K East Discharge Chute Immobilization	PI	12/30/04	08/20/04		Complete
DNFSB 119E (S10-05-014)	Complete K East Sludge Consolidation	DNFSB	12/31/04		03/24/06	Behind Schedule
RL-12-1.ba (S10-99-083)	Treat 1 Cubic Meter of Sludge	PI	02/28/05		11/30/05	Behind Schedule
M-034-33B (S10-05-018)	Complete K East Sludge Containerization	TPA	03/01/05		03/24/06	Behind Schedule
S10-99-80	Complete MCO Welding	PI	06/30/05	06/16/05		Complete
DNFSB 120E (S10-05-015)	Complete K East Basin Sludge Removal	DNFSB	07/31/05		04/04/06	Behind Schedule
RL-12-1.b (S10-99-082)	Transfer K East Sludge to K West Containers	PI	07/31/05		04/04/06	Behind Schedule
RL-12-1.bb (S10-99-963)	Transfer Found Fuel and Fuel Scrap from K East to K West	PI	07/31/05		04/24/06	Behind Schedule
M34-21-T1 (S10-99-951)	Initiate Full Scale K West Basin Water Removal	TPA	12/31/05		09/23/06	Behind Schedule
RL-12-1.cg (S10-99-973)	Immobilize K West Discharge Chute	PI	12/31/05		09/23/06	Behind Schedule
M-034-34 (S10-05-010)	Complete Removal of K East Sludge	TPA	01/31/06		04/04/06	Behind Schedule
RL-12-1.ch (S10-99-976)	Complete Removal of Contaminated Fuel Canisters	PI	01/31/06	06/21/05		Complete
RL-12-1.ce (S10-99-978)	Complete K East Water Removal	PI	01/31/06		08/18/06	Behind Schedule
DNFSB 119W (S10-05-016)	Complete K West Sludge Containerization	DNFSB	02/28/06		06/28/06	Behind Schedule
RL-12-1.ca (S10-99-967)	Encapsulate 3 K East Bays	PI	02/28/06		08/18/06	Behind Schedule
RL-12-1.bd (S10-99-965)	Commencement of Floor and Canister Sludge Treatment	PI	03/30/06		09/30/07	Behind Schedule
RL-12-1.cb (S10-99-968)	Remove K East Superstructure	PI	06/30/06		12/08/06	Behind Schedule
M-034-35 (S10-05-011)	Containerize K West Sludge	TPA	06/30/06		06/28/06	Behind Schedule
RL-12-1.cc (S10-99-969)	Complete First K East Basin Section Disposal	PI	07/31/06		04/16/07	Behind Schedule
RL-12-1.ci (S10-99-971)	Decon/Immobilize K West Basin Wall (7600 sq. ft.)	PI	08/31/06		08/31/06	On Schedule
RL-12-1.bc (S10-99-081)	Remove Found Fuel and Scrap	PI	09/30/06		09/30/06	On Schedule
RL-12-1.cf (S10-99-972)	Complete K East Basin Removal	PI	09/30/06		10/19/07	Behind Schedule

NOTE: HQ-0012X has no milestones.